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(71)Applicant : CANON INC

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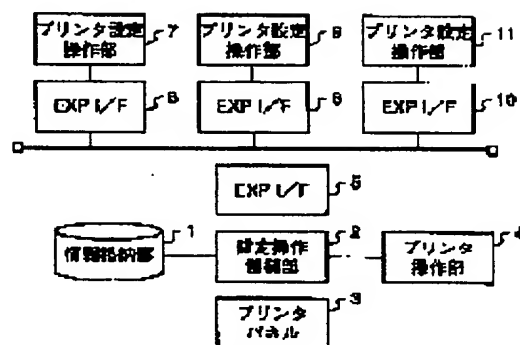
(72)Inventor : OYA TAKASHI

(54) PRINTER SYSTEM, PRINTER AND PRINTER SETTING METHOD

(57)Abstract:

PURPOSE: To provide a printer system which is capable of preventing the generation of a discrepancy in setting and disabled setting when a printer setting operations are simultaneously performed from a printer main body side and an external equipment device side.

CONSTITUTION: This printer system is provided with a printer, a printer panel 3 which is provided on the printer and is capable of performing a printer setting operation, printer setting operation parts 7, 9 and 11 which are provided on the external equipments connected to the printer and are capable of performing printer setting operations, an information storage part 1 storing the printer setting operation states by the printer panel 3 and the printer setting operation parts 7, 9 and 11, and a setting operation control part 2 rejecting the setting operation request from others by referring to the contents of the information storage part 1 when the printer setting operation is performed by either one of the printer panel 3 and the printer setting operation parts 7, 9 and 11.



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CLAIMS

[Claim(s)]

[Claim 1]A printer system which was formed in a printer and the printer side setting operation means which is formed in this printer, and in which setting operation of the printer concerned is possible characterized by comprising the following, and an external instrument connected to said printer, and was provided with the external instrument side setting operation means in which setting operation of said printer is possible.

A memory measure which memorizes a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means.

A control means which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure when setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are.

[Claim 2]Said printer system according to claim 1 characterized by comprising the following.
A reporting means which notifies change of a setting operation state of said printer to said each setting operation means.

Display evaluation methods which evaluate a display of a setting operation state which was attached to said each setting operation means, and was changed in response to a change notice of said setting operation state.

The printer side displaying means which is attached to said printer side setting operation means, and displays a setting operation state based on directions from said display evaluation methods.

[Claim 3]A printer system, wherein it establishes a memory measure which memorizes setting operation origin in said printer system according to claim 1 or 2 and said control means has a

function which sends out setting operation former information memorized by said memory measure to said external instrument.

[Claim 4]In said printer system according to claim 1, 2, or 3, a setting operation condition evaluation means which evaluates a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means is established, A printer system, wherein said control means has the function to cancel a setting operation state when it is judged that predetermined conditions were satisfied based on evaluation by said setting operation condition evaluation means.

[Claim 5]A printer and the printer side setting operation means which is formed in this printer and in which setting operation of the printer concerned is possible characterized by comprising the following, A printer setting method of a printer system which was formed in an external instrument connected to said printer, and was provided with the external instrument side setting operation means in which setting operation of said printer is possible.

A memory step which memorizes a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means.

A control step which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure when setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are.

[Claim 6]Said printer setting method according to claim 5 characterized by comprising the following.

A notification step which notifies change of a setting operation state of said printer to said each setting operation means.

A display evaluation step which evaluates a display of a setting operation state changed in response to a change notice of a setting operation state in said each setting operation means. The printer side displaying step which displays said changed setting operation state with said printer based on directions from said display evaluation methods.

[Claim 7]A printer setting method, wherein it provides a memory step which memorizes setting operation origin in said printer setting method according to claim 5 or 6 and said control step has a function which sends out setting operation former information memorized by said memory step to said external instrument.

[Claim 8]In said printer setting method according to claim 5, 6, or 7, ** is provided as ***** which evaluates a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means, A printer setting method, wherein said control step has the function to cancel a setting operation state when it is judged that

predetermined conditions were satisfied based on evaluation by said evaluation methods.

[Claim 9] A printer provided with the printer side setting operation means in which setting operation of a printer is possible while being connected to an external instrument characterized by comprising the following.

A memory measure which is provided in said printer side setting operation means and external instrument side, and memorizes a printer setting operation state by the external instrument side setting operation means which can set up the printer concerned.

A control means which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure when setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Industrial Application]This invention relates to a suitable printer system, when performing printer setting operation from two or more external instrument devices linked to a printer.

[0002]

[Description of the Prior Art]In [a printer is conventionally connected to two or more external instrument devices, and] the case where these external instrument device to printer setting operation is possible, Printer setting operation can be performed now from the printer setting mechanism with which the external instrument device [which is connected to a printer] and printer body side is equipped.

[0003]

[Problem(s) to be Solved by the Invention]As mentioned above, since printer setting operation was possible, there were the following problems from the printer setting mechanism by the side of the external instrument device linked to a printer, and a printer body. That is, when printer setting operation was simultaneously performed from the external instrument device and the printer setting mechanism, there was fault of inconsistency having arisen in setting out or falling into setting-out impossible.

[0004]An object of this invention is to provide the printer system which can prevent inconsistency arising in setting out or falling into setting-out impossible when an aforementioned problem is solved and printer setting operation is simultaneously performed from the printer body and external instrument device side.

[0005]

[Means for Solving the Problem]The printer side setting operation means in which an invention of claim 1 is provided in a printer and this printer and in which setting operation of the printer concerned is possible, In a printer system which was formed in an external instrument

connected to said printer, and was provided with the external instrument side setting operation means in which setting operation of said printer is possible, A memory measure which memorizes a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means, When setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are, composition of providing a control means which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure is taken.

[0006]In said printer system according to claim 1 an invention of claim 2, A reporting means which notifies change of a setting operation state of said printer to said each setting operation means, Display evaluation methods which evaluate a display of a setting operation state which was attached to said each setting operation means, and was changed in response to a change notice of said setting operation state, Composition of having established the printer side displaying means which is attached to said printer side setting operation means, and displays a setting operation state based on directions from said display evaluation methods is taken.

[0007]An invention of claim 3 established a memory measure which memorizes setting operation origin in said printer system according to claim 1 or 2, and said control means has taken composition of having a function which sends out setting operation former information memorized by said memory measure to said external instrument.

[0008]In said printer system according to claim 1, 2, or 3 an invention of claim 4, Establish a setting operation condition evaluation means which evaluates a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means, and said control means, Composition of having the function to cancel a setting operation state when it is judged that predetermined conditions were satisfied based on evaluation by said setting operation condition evaluation means is taken.

[0009]The printer side setting operation means in which an invention of claim 5 is provided in a printer and this printer and in which setting operation of the printer concerned is possible, In a printer setting method of a printer system which was formed in an external instrument connected to said printer, and was provided with the external instrument side setting operation means in which setting operation of said printer is possible, A memory step which memorizes a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means, When setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are, composition of providing a control step which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure is taken.

[0010]In said printer setting method according to claim 5 an invention of claim 6, A notification

step which notifies change of a setting operation state of said printer to said each setting operation means, A display evaluation step which evaluates a display of a setting operation state changed in response to a change notice of a setting operation state in said each setting operation means, Composition of having provided the printer side displaying step which displays said changed setting operation state with said printer based on directions from said display evaluation methods is taken.

[0011]An invention of claim 7 provided a memory step which memorizes setting operation origin in said printer setting method according to claim 5 or 6, and said control step has taken composition of having a function which sends out setting operation former information memorized by said memory step to said external instrument.

[0012]In said printer setting method according to claim 5, 6, or 7 an invention of claim 8, Provide ** as ***** which evaluates a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means, and said control step, Composition of having the function to cancel a setting operation state when it is judged that predetermined conditions were satisfied based on evaluation by said evaluation methods is taken.

[0013]In a printer provided with the printer side setting operation means in which setting operation of a printer is possible while an invention of claim 9 was connected to an external instrument, A memory measure which is provided in said said printer side setting operation means and external instrument side, and memorizes a printer setting operation state by the external instrument side setting operation means which can set up the printer concerned, When setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are, composition of providing a control means which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure is taken.

[0014]

[Function]According to the invention of claims 1, 5, and 9, if a user performs setting operation of a printer for example, by the printer side setting operation means, it will be memorized by the memory measure by the printer side setting operation means that it is in a setting operation state. And with reference to the memory content of a memory measure, a control means refuses the setting operation demand from other setting operation means, when it is in a setting operation state by any of the printer side setting operation means and the external instrument side setting operation means they are. When this performs printer setting operation simultaneously from the printer side setting operation means and the external instrument side setting operation means, inconsistency arising in setting out or falling into setting-out impossible is prevented.

[0015]According to the invention of claims 2 and 6, if a user performs setting operation of a

printer for example, by the printer side setting operation means, a reporting means will notify change of the established state of a printer to each setting operation means. The display evaluation methods of each setting operation means evaluate the display of a setting operation state changed in response to the change notice of said setting operation state. And based on the directions from display evaluation methods, a setting operation state is displayed on the printer side displaying means. Thereby, if a user views the display of the printer side displaying means, a setting operation state can be checked.

[0016]According to the invention of claims 3 and 7, if a user performs setting operation of a printer for example, by the printer side setting operation means, setting operation origin (printer side setting operation means) will be memorized by the memory measure. And a control means sends out the setting operation former information memorized by the memory measure to an external instrument. Thereby, an operator's check can be performed.

[0017]According to the invention of claims 4 and 8, if a user performs setting operation of a printer for example, by the printer side setting operation means, a setting operation condition evaluation means will evaluate the printer setting operation state by the printer side setting operation means. And a control means cancels a setting operation state, when a predetermined condition is satisfied based on evaluation by a setting operation condition evaluation means. Thereby, a setting operation state is canceled automatically, without through a help.

[0018]

[Example]Hereafter, the example of this invention is described based on a drawing.

[0019](1) 1st example drawing 1 is the composition of the printer system concerning the 1st example a shown block diagram, and the printer system of the 1st example, The information storing part 1, the setting operation control section 2, the printer panel 3, and the printer control part 4, It comprises the interface part 5, the interface part 6, the printer setting operation section 7, the interface part 8, the printer setting operation section 9, the interface part 10, and the printer setting operation section 11. The above-mentioned information storing part 1, the setting operation control section 2, the printer panel 3, the printer control part 4, and the interface part 5 are formed in the printer side. The interface part 6 and the printer setting operation section 7 are formed in the 1st external instrument device side to which said printer was connected, The interface part 8 and the printer setting operation section 9 are formed in the 2nd external instrument device side to which said printer was connected, and the interface part 10 and the printer setting operation section 11 are formed in the 3rd external instrument device side to which said printer was connected.

[0020]If this is explained in full detail, the information storing part 1 will memorize setting operation state information.

The setting operation control section 2 controls setting operation.

These information storing parts 1 and the setting operation control section 2 are components which make the feature of this invention. The printer panel 3 is a final controlling element for users with which the printer body is equipped. The printer control part 4 controls operation of each part of a printer. The interface part 5 performs an interface with each external instrument device.

[0021]The printer setting operation section 7 is for performing printer setting operation from the 1st external instrument device.

The interface part 6 performs an interface with a printer.

The printer setting operation section 9 is for performing printer setting operation from the 2nd external instrument device.

The interface part 8 performs an interface with a printer.

The printer setting operation section 11 is for performing printer setting operation from the 3rd external instrument device.

The interface part 10 performs an interface with a printer.

[0022]In the printer system constituted like the above, based on the setting operation state information memorized to the control and the information storing part 1 by the setting operation control section 2 by carrying out exclusive control of the printer setting request from two or more printer setting operation sections, Setting operation which avoided simultaneous setting out from two or more printer setting operation sections is made possible. Drawing 2 is a key map showing information content of the information storing part 1 concerning this example, and has a state and setting operation origin as data. In the limitation which does not interfere with realization of operation of this example, what kind of form may be sufficient as the kind/the contents of data. Although this example shows the example which connected three external instrument devices to the printer, an external instrument device is not limited to three sets.

[0023]Next, operation of the 1st example is explained based on drawing 3. the time of a printer being an on-line state, i.e., a job waiting state, -- the information storing part 1 -- the setting operation control section 2 -- "-- state:job waiting state and host: -- nothing -- " -- data is set up. Here, if the shift to a printer established state from a job waiting state is directed when a user operates the printer panel 3, the printer panel 3 will output a setting operation demand to the setting operation control section 2. If the setting operation control section 2 receives the setting operation demand from the printer panel 3 in connection with this (the answer of step SA1 and step SA2 affirms), with reference to the data of the information storing part 1, it will check that it is a state:job waiting state (step SA4). If it checks that the present state is a job waiting state based on the data of the information storing part 1 (the answer of step SA5 denies), the setting operation control section 2, the contents of the information storing part 1 -- "-- state: -- under setting operation and host:printer panel" -- it changes into data, and (step SA6) the setting

operation demand of the printer panel 3 is received, and the printer panel 3 and the printer control part 4 are interfaced (step SA7).

[0024]Here, if other users operate the printer setting operation section 7 of the 1st external instrument device, the printer setting operation section 7 will output a setting operation demand to the setting operation control section 2 by the side of a printer via the interface 6 and the interface part 5. The setting operation control section 2 will check whether setting operation is possible with reference to the data of the information storing part 1 (step SA4), if the setting operation demand from the printer setting operation section 7 is received (the answer of step SA1 and step SA2 affirms) (step SA5). The setting operation control section 2 will refuse the setting operation terminating request of the printer setting operation section 7, if it checks that the present state is in a setting operation state based on the data of the information storing part 1 (the answer of step SA5 affirms) (step SA13).

[0025]In connection with the user having ended the printer setting operation which operated and mentioned the printer panel 3 above, and having returned the printer to the job waiting state, the setting operation control section 2, If the end of operation from the printer panel 3 is received (the answer of step SA1 and step SA3 affirms), With reference to the data of the information storing part 1 (step SA8), it checks whether there is any thing under setting operation, and (step SA9) it is checked whether the host in setting operation is a setting request host (step SA10). When the answer of step SA9 and step SA10 is affirmation, the setting operation control section 2, the contents of the information storing part 1 -- "-- state: -- from under [setting operation] and host:printer panel" -- "-- state:job standby and host: -- nothing -- " -- it changes into data (step SA11) and the interface of the printer panel 3 and the printer control part 4 is canceled (step SA12).

[0026]Next, also when a user operates the printer setting operation section 7, there is no change in the operation itself only by there being a point that a setting operation demand is sent to the setting operation control section 2 via the interface part 6 and the interface part 5 from the printer setting operation section 7.

[0027]By above-mentioned composition and operation, since the setting-out inconsistency by simultaneous setting out from the printer setting operation section of two or more external instrument devices is avoidable, one set of the printer shared between two or more external instrument devices can be set up exactly.

[0028](2) The point, as for, the 2nd example carries out difference to the 1st example forms the operating condition informing part 41 and the display evaluating part 42 in the printer side, and 2nd example drawing 4 is a figure showing the composition of the 2nd example, and it is a point of having formed the display evaluating parts 43, 44, and 45 in each external instrument device side.

Since the composition of those other than this is the same, it shall give identical codes to

common composition, and shall omit explanation.

He is trying to display the setting operation state by a user in the 2nd example in addition to the operation explained in the 1st example.

[0029]If this is explained in full detail, the operating condition informing part 41 will notify the setting operation state by a user to the display evaluating parts 42, 43, 44, and 45. The display evaluating part 42 is attached to the printer panel 3.

The display evaluating parts 43, 44, and 45 are respectively attached to the printer setting operation sections 7, 9, and 11.

The notification information sent from the operating condition informing part 41 is displayed on the display evaluating parts 42, 43, 44, and 45. The interface parts 5, 6, 8, and 10 have a function which sends and receives the notification information outputted from the operating condition informing part 41.

[0030]Next, operation of the 2nd example is explained. Also in the 2nd example, in order to perform printer setting by the same method as the 1st example mentioned above, a portion peculiar to especially this example is explained in full detail here.

[0031]If a user operates the printer panel 3 and directs the shift to a printer established state from a job waiting state like the 1st example when a printer is an on-line state, i.e., a job waiting state, the printer panel 3 will output a setting operation demand to the setting operation control section 2. In connection with this, the setting operation control section 2 receives the setting operation demand from the printer panel 3, and performs operation evaluation with reference to the information storing part 1. The setting operation control section 2 changes the data of the information storing part 1 into the data in which a setting operation possible state is shown, when it is judged that it is operational, and notifies the purport of operating condition change to the operating condition informing part 41, and interfaces information exchange with the printer panel 3 and the printer control part 4.

[0032]The operating condition informing part 41 acquires the information currently stored in the information storing part 1 in connection with having received the setting operation demand from the setting operation control section 2, and notifies display change processing to the display evaluating parts 42, 43, 44, and 45. In this case, with the connection method of a printer and an external instrument device, the method of the notice by the operating condition informing part 41 is various, and is omitted about a notifying method especially by this example.

[0033]Although the notice of display change processing is received from the operating condition informing part 41, the display evaluating part 42 estimates performing operation change processing from the printer panel 3, and the notice of display change processing is disregarded by it. On the other hand, the display evaluating parts 43, 44, and 45 receive the notice of display change processing from the operating condition informing part 41

respectively, and when presenting of notification information is possible, they direct a change display to the printer setting operation sections 7, 9, and 10 respectively. Thereby, the printer setting operation sections 7, 9, and 10 display on the indicator (graphic display abbreviation) of the external instrument device respectively corresponding to these printer setting operation sections 7, 9, and 10.

[0034]With the case where presenting of the notification information mentioned above is possible here. For example, when it is a system which can display an automatic target's message on the indicator of an external instrument device or is ready for displaying notification information with an external instrument device, the case where setting out which can be displayed by satisfactory state and user is made about the display is said.

[0035]Also when a user operates the printer panel 3 and similarly ends printer setting operation, the setting operation control section 2, Change into the data in which a job waiting state is shown from the data in which the end of setting operation of the printer panel 3 is received, and a setting operation state is shown for the information storing part 1, and. The purport of operating condition change is notified to the operating condition informing part 41, and also the interface of the printer panel 3 and the printer control part 4 is released as processing which receives the setting operation demand of the printer panel 3. The operating condition informing part 41 receives a setting operation demand from the setting operation control section 2, and notifies display change processing to the display evaluating parts 42, 43, 44, and 45. The evaluation/display processing after this are also the same.

[0036]When a user operates the printer setting operation section 7 and advances a setting operation demand, from the printer setting operation section 7, a setting operation demand is sent to the setting operation control section 2 via the interface part 6 and the interface part 5. The setting operation control section 2 interfaces the printer setting operation section 7 and the printer control part 4 at the same process as acceptance of the setting operation demand from the printer panel 3, as the setting operation demand from the printer setting operation section 7 was received and mentioned above. The operating condition informing part 41 receives a setting operation demand from the setting operation control section 2, and notifies display change processing to the display evaluating parts 42, 43, 44, and 45. In the display evaluating part 42, the notice of the display change processing from the operating condition informing part 41 is received, and it checks that there is no panel input in the printer panel 3, and the display under setting operation is performed to the display evaluating part 42. The display evaluating parts 43, 44, and 45 perform evaluation/display processing, respectively.

[0037]Can set up exactly one set of the printer which can avoid the setting-out inconsistency by simultaneous setting out from two or more printer setting operation sections, and is shared between two or more external instrument devices like the 1st example by above-mentioned composition and operation, and. It becomes possible to notify the setting operation state by

each printer setting operation section.

[0038]Although the 2nd example described the display evaluating part 42, the printer panel 3 and the display evaluating part 43, the printer setting operation section 7 and the display evaluating part 44, the printer setting operation section 9 and the display evaluating part 45, and the printer setting operation section 11 as separate composition, even if it regards it as the unified system, it is satisfactory in any way. Although display change processing is notified from the operating condition informing part 41 to the display evaluating parts 42, 43, 44, and 45 and each of the display evaluating parts 42, 43, 44, and 45 is performing display evaluation processing in the 2nd example, In the operating condition informing part 41, the 2nd example mentioned above even when operating not notifying display change processing to the external instrument device of setting operation origin with reference to the data of the information storing part 1 etc. is applicable.

[0039]That is, the point by which it is characterized [of the 2nd example] is performing the notice of a setting variation to an external instrument device, without limiting ***** containing the external instrument device of setting operation origin, when a setting operation demand is received from either of two or more external instrument devices.

[0040]Although what was shown in above-mentioned drawing 2 like the 1st example as information stored in the information storing part 1 is mentioned as an example in the 2nd example, the composition of information is arbitrary and the structure transmitted to the display evaluating part which attached information to a printer panel or each printer setting operation section respectively is important for it. The example which notifies only a setting operation state and displays only a setting operation state can also be constituted similarly.

[0041](3) Describe the 3rd example, next the 3rd example. The 3rd example is made to carry out automatic removal of the setting operation state, and the composition of the 3rd example is the same as the composition (refer to above-mentioned drawing 4) of the 2nd example.

Drawing 5 is information content of the information storing part 1 of the 3rd example, and drawing 6 is an example of the automatic removal conditions which the setting operation control section 2 of the 3rd example holds as information. Drawing 7 is an operation flow chart of the 3rd example, and the drawing 7 concerned shows the portion of step SA1 among the operation flow charts of the setting operation control section 2 shown by above-mentioned drawing 3. Especially the 3rd example explains operation of the setting operation control section 2.

[0042]If the setting operation control section 2 receives the operation request from which printer setting operation section, information (a state, a host name, setting-out time of onset) as shown in drawing 5 will be stored in the information storing part 1. Henceforth, when there is not a setting operation demand / terminating request, the answer of (step SB1 reads the data of negative) and the information storing part 1 (step SB2), and the setting operation

control section 2 checks whether it is during setting operation (step SB3). In under setting operation, the answer of (step SB3 the setting operation control section 2 And affirmation), When the automatic removal condition data currently held to setting operation control-section 2 inside is evaluated (step SB4) and conditions are fulfilled, the answer of (step SB4 regards it as affirmation) and operation release, and shifts to processing of step SA11 of above-mentioned drawing 3. That is, the setting operation control section 2 notifies setting operation release to operation request origin, it notifies operation request release to the operating condition informing part 41, and the operating condition informing part 41 notifies display change processing to the display evaluating parts 42, 43, 44, and 45.

[0043]The forced release from a setting operation state is realizable as mentioned above. Two condition items shown in drawing 6 of the 3rd example are examples, and if condition items are the elements which can be evaluated, they will not be limited to the thing of above-mentioned drawing 6. Although operation formed by the loop shown in above-mentioned drawing 7 based on operation of the 1st example is performed in the 3rd example, the timing which performs condition evaluation is freedom, such as event-driven and a polled type, according to the operation form of a system. That is, the point which evaluates conditions by the 3rd example and carries out automatic removal of the setting operation state in it is the feature.

[0044]

[Effect of the Invention]As explained above, according to the invention of claims 1 and 5 and nine statements, when printer setting operation is simultaneously performed from the printer side setting operation means and the external instrument side setting operation means, the effect that it can prevent certainly inconsistency arising in setting out or falling into setting-out impossible is done so.

[0045]According to the invention of claim 2 and six statements, if a user views the display of the printer side displaying means, the effect that the present printer setting operation state can be checked exactly will be done so.

[0046]According to the invention of claim 3 and seven statements, the effect that an operator can be checked exactly is done so.

[0047]According to the invention of claim 4 and eight statements, the effect that the setting operation state of a printer can be canceled automatically without through a help is done so.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a block diagram showing the composition of the printer system concerning the 1st example of this invention.

[Drawing 2]It is a key map showing information content of the information storing part of the 1st example.

[Drawing 3]It is an operation flow chart about the setting operation control section of the 1st example.

[Drawing 4]It is a block diagram showing the composition of the printer system concerning the 2nd example of this invention.

[Drawing 5]It is a figure showing information content of the information storing part of the 3rd example of this invention.

[Drawing 6]It is a key map showing the example of an automatic removal condition of the setting operation control section of the 3rd example.

[Drawing 7]It is an operation flow chart about the setting operation control section of the 3rd example.

[Description of Notations]

- 1 Information storing part (memory measure)
- 2 Setting operation control section (control means)
- 3 Printer panel (printer side setting operation means)
- 7, 9, and 11 Printer setting operation section (external instrument side setting operation means)
- 41 Operating condition informing part (reporting means)
- 42, 43, 44, and 45 Display evaluating part (a displaying means, evaluation methods)

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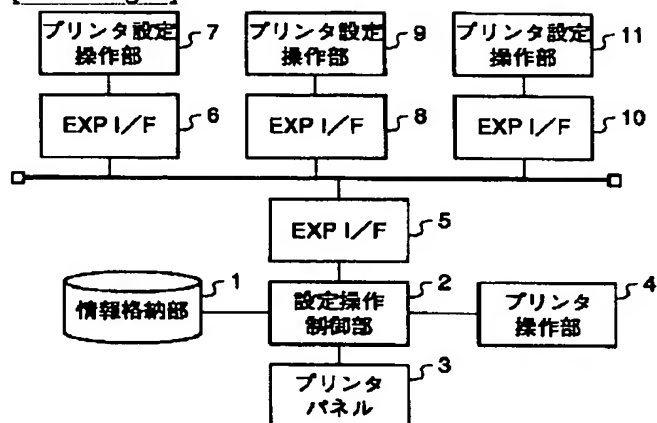
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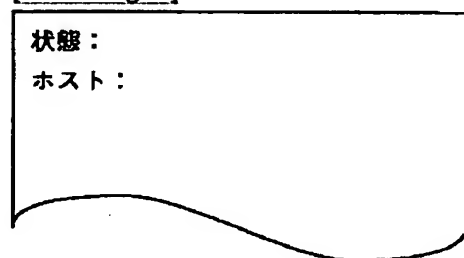
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DRAWINGS

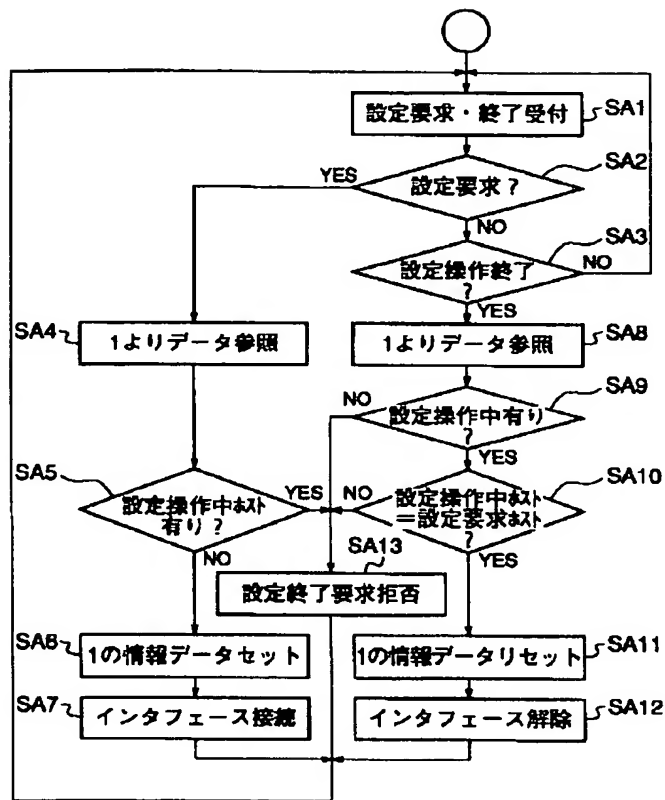
[Drawing 1]



[Drawing 2]



[Drawing 3]



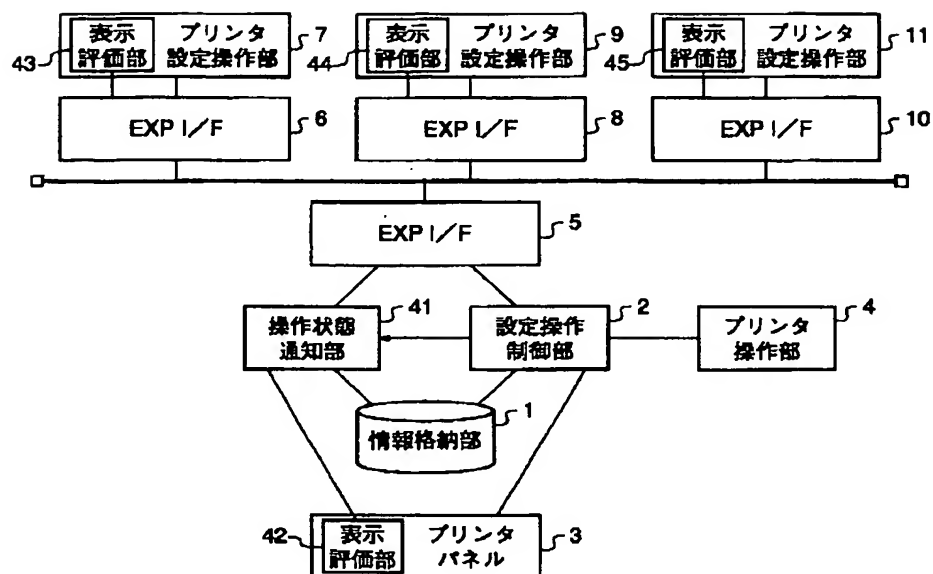
[Drawing 5]

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 設定開始時間：

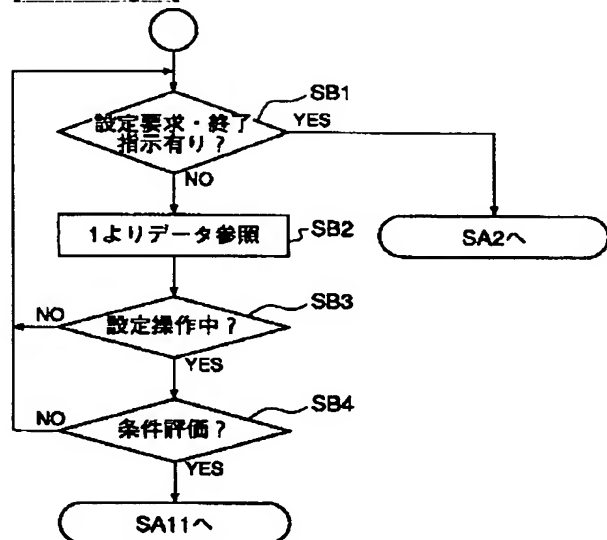
[Drawing 6]

OR 設定操作開始から10分以上経過
 OR 最終アクセスから2分経過

[Drawing 4]



[Drawing 7]



[Translation done.]

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CORRECTION OR AMENDMENT

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[Amendment 1]

[Document to be Amended]Specification

[Item(s) to be Amended]The name of an invention

[Method of Amendment]Change

[Proposed Amendment]

[Title of the Invention]A printer system, a printer, a printer setting method, and a printer controlling method

[Amendment 2]

[Document to be Amended]Specification

[Item(s) to be Amended]Claim

[Method of Amendment]Change

[Proposed Amendment]

[Claim(s)]

[Claim 1]A printer system which was formed in a printer and the printer side setting operation means which is formed in this printer, and in which setting operation of the printer concerned is possible characterized by comprising the following, and an external instrument connected to said printer, and was provided with the external instrument side setting operation means in which setting operation of said printer is possible.

A memory measure which memorizes a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means.

A control means which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure when setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are.

[Claim 2]Said printer system according to claim 1 characterized by comprising the following.

A reporting means which notifies change of a setting operation state of said printer to said each setting operation means.

Display evaluation methods which evaluate a display of a setting operation state which was attached to said each setting operation means, and was changed in response to a change notice of said setting operation state.

The printer side displaying means which is attached to said printer side setting operation means, and displays a setting operation state based on directions from said display evaluation methods.

[Claim 3]A printer system, wherein it establishes a memory measure which memorizes setting operation origin in said printer system according to claim 1 or 2 and said control means has a function which sends out setting operation former information memorized by said memory measure to said external instrument.

[Claim 4]In said printer system according to claim 1, 2, or 3, a setting operation condition

evaluation means which evaluates a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means is established, A printer system, wherein said control means has the function to cancel a setting operation state when it is judged that predetermined conditions were satisfied based on evaluation by said setting operation condition evaluation means.

[Claim 5]In a printer setting method of a printer system which was formed in a printer and this printer, was formed in the printer side setting operation means in which setting operation of the printer concerned is possible, and an external instrument connected to said printer, and was provided with the external instrument side setting operation means in which setting operation of said printer is possible,

A printer setting method by which it was characterized, comprising:

A memory step which memorizes a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means.

A control step which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure when setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are.

[Claim 6]Said printer setting method according to claim 5 characterized by comprising the following.

A notification step which notifies change of a setting operation state of said printer to said each setting operation means.

A display evaluation step which evaluates a display of a setting operation state changed in response to a change notice of a setting operation state in said each setting operation means.

The printer side displaying step which displays said changed setting operation state with said printer based on directions from said display evaluation methods.

[Claim 7]A printer setting method, wherein it provides a memory step which memorizes setting operation origin in said printer setting method according to claim 5 or 6 and said control step has a function which sends out setting operation former information memorized by said memory step to said external instrument.

[Claim 8]In said printer setting method according to claim 5, 6, or 7, an evaluation step which evaluates a printer setting operation state by said printer side setting operation means and said external instrument side setting operation means is provided, A printer setting method, wherein said control step has the function to cancel a setting operation state when it is judged that predetermined conditions were satisfied based on evaluation by said evaluation methods.

[Claim 9]In a printer provided with the printer side setting operation means in which setting

operation of a printer is possible while being connected to an external instrument,

A printer by which it was characterized, comprising:

A memory measure which is provided in said printer side setting operation means and external instrument side, and memorizes a printer setting operation state by the external instrument side setting operation means which can set up the printer concerned.

A control means which refuses a setting operation demand from other setting operation means with reference to a memory content of said memory measure when setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are.

[Claim 10] It is a printer which can receive a setting request outputted in setup information of a printer from an information processor in which setting operation is possible,

A memory measure which memorizes setup information of the printer concerned,

A control means which setting operation is possible in setup information of said printer, and outputs a setting request,

A printer providing a judging means which judges whether the 2nd setting request is already outputted when controlling access to setup information memorized by said memory measure according to the 1st setting request outputted from said information processor or said control means.

[Claim 11] The printer possessing a setting request memory measure which memorizes that said 2nd setting request is outputted from said information processor or said control means according to claim 10.

[Claim 12] The printer according to claim 11, wherein said setting request memory measure memorizes whether said 2nd setting request was outputted from said information processor, or said 2nd setting request was outputted from said control means.

[Claim 13] A printer of claim 10-12 providing an access control means to which access to setup information memorized by said memory measure to said 1st setting request is permitted when judged with said 2nd setting request not being outputted by said judging means given in any 1 paragraph.

[Claim 14] It is a printer controlling method in a printer which has a memory measure which memorizes setup information of a control means in which setting operation is possible, and a printer for setup information of a printer,

A receiving step which receives a setting request outputted from a setting request outputted from an information processor in which setting operation of said printer is possible, or said control means,

A printer controlling method by which a determination step which judges whether the 2nd setting request is already received in said receiving step being included when controlling

access to setup information memorized by said memory measure according to the 1st setting request received at said receiving step.

[Claim 15]The printer controlling method according to claim 14 containing a setting request memory step which makes a setting request memory measure memorize that said 2nd setting request is outputted from said information processor or said control means.

[Claim 16]The printer controlling method according to claim 15 making said setting request memory measure memorize whether said 2nd setting request was outputted from said information processor, or said 2nd setting request was outputted from said control means in said setting request memory step.

[Claim 17]When judged with said 2nd setting request not being outputted in said determination step, A printer controlling method of claim 14-16 containing an access control step which permits access to setup information memorized by said memory measure to said 1st setting request given in any 1 paragraph.

[The amendment 3]

[Document to be Amended]Specification

[Item(s) to be Amended]0001

[Method of Amendment]Change

[Proposed Amendment]

[0001]

[Industrial Application]This invention relates to a suitable printer system, a printer, a printer setting method, and a printer controlling method, when performing printer setting operation from two or more external instrument devices linked to a printer.

[Amendment 4]

[Document to be Amended]Specification

[Item(s) to be Amended]0004

[Method of Amendment]Change

[Proposed Amendment]

[0004]When this invention solves an aforementioned problem and printer setting operation is simultaneously performed from the printer body and external instrument device side, It aims at providing the printer system, the printer, printer setting method, and printer controlling method which can prevent inconsistency arising in setting out or falling into setting-out impossible.

[Amendment 5]

[Document to be Amended]Specification

[Item(s) to be Amended]0012

[Method of Amendment]Change

[Proposed Amendment]

[0012]In said printer setting method according to claim 5, 6, or 7 the invention of claim 8,

Provide the evaluation step which evaluates the printer setting operation state by said printer side setting operation means and said external instrument side setting operation means, and said control step, The composition of having the function to cancel a setting operation state when it is judged that predetermined conditions were satisfied based on evaluation by said evaluation methods is taken.

[Amendment 6]

[Document to be Amended]Specification

[Item(s) to be Amended]0013

[Method of Amendment]Change

[Proposed Amendment]

[0013]In the printer provided with the printer side setting operation means in which the setting operation of a printer is possible while the invention of claim 9 was connected to the external instrument, The memory measure which is provided in said said printer side setting operation means and external instrument side, and memorizes the printer setting operation state by the external instrument side setting operation means which can set up the printer concerned, When setting operation of a printer is performed by any of said printer side setting operation means and said external instrument side setting operation means they are, the composition of providing the control means which refuses the setting operation demand from other setting operation means with reference to the memory content of said memory measure is taken. The memory measure which the invention of claim 10 is a printer which can receive the setting request outputted in the setup information of the printer from the information processor in which setting operation is possible, and memorizes the setup information of the printer concerned, The control means which setting operation is possible in the setup information of said printer, and outputs a setting request, When controlling access to the setup information memorized by said memory measure according to the 1st setting request outputted from said information processor or said control means, the judging means which judges whether the 2nd setting request is already outputted is provided. The invention of claim 11 possesses the setting request memory measure which memorizes that said 2nd setting request is outputted from said information processor or said control means in the printer of said claim 12. In the printer of said claim 11, as for the invention of claim 12, said setting request memory measure memorizes whether said 2nd setting request was outputted from said information processor, or said 2nd setting request was outputted from said control means. In the printer of any 1 paragraph of said claims 10-12 the invention of claim 13, When judged with said 2nd setting request not being outputted by said judging means, the access control means to which access to the setup information memorized by said memory measure to said 1st setting request is permitted is provided. The invention of claim 14 is a printer controlling method in the printer which has a memory measure which memorizes the setup information of the control means in

which setting operation is possible, and a printer for the setup information of a printer, The receiving step which receives the setting request outputted from the setting request outputted from the information processor in which the setting operation of said printer is possible, or said control means, When controlling access to the setup information memorized by said memory measure according to the 1st setting request received at said receiving step, the determination step which judges whether the 2nd setting request is already received in said receiving step is included. The invention of claim 15 contains the setting request memory step which makes a setting request memory measure memorize that said 2nd setting request is outputted from said information processor or said control means in the printer controlling method of said claim 14. On the printer controlling method of said claim 15, and in said setting request memory step in the invention of claim 16, Said setting request memory measure is made to memorize whether said 2nd setting request was outputted from said information processor, or said 2nd setting request was outputted from said control means. In the printer controlling method of any 1 paragraph of said claims 14-16 the invention of claim 17, When judged with said 2nd setting request not being outputted in said determination step, the access control step which permits access to the setup information memorized by said memory measure to said 1st setting request is included.

[Amendment 7]

[Document to be Amended]Specification

[Item(s) to be Amended]0017

[Method of Amendment]Change

[Proposed Amendment]

[0017]According to the invention of claims 4 and 8, if a user performs setting operation of a printer for example, by the printer side setting operation means, a setting operation condition evaluation means will evaluate the printer setting operation state by the printer side setting operation means. And a control means cancels a setting operation state, when a predetermined condition is satisfied based on evaluation by a setting operation condition evaluation means. Thereby, a setting operation state is canceled automatically, without through a help. According to the invention of claim 10, the setup information of the printer concerned is memorized by a memory measure, When controlling access to the setup information memorized by said memory measure according to the 1st setting request outputted from the information processor or the control means, it is judged by a judging means whether the 2nd setting request is already outputted. According to the invention of claim 11, it is memorized by a setting request memory measure that said 2nd setting request is outputted from the information processor or the control means. According to the invention of claim 12, it is memorized by said setting request memory measure whether said 2nd setting request was outputted from said information processor or said 2nd setting request was outputted from said

control means. the setup information memorized by said memory measure to said 1st setting request by the access control means when judged with said 2nd setting request not being outputted by said judging means according to the invention of claim 13 -- an access permit is carried out. According to the invention of claim 14, the setting request outputted from the setting request outputted in the receiving step from the information processor in which the setting operation of a printer is possible, or the control means is received, When controlling access to the setup information memorized by said memory measure according to the 1st setting request received at the receiving step, in a determination step, it is judged whether the 2nd setting request is already received in said receiving step. According to the invention of claim 15, in a setting request memory step, it is memorized by the setting request memory measure that said 2nd setting request is outputted from said information processor or said control means. According to the invention of claim 16, in said setting request memory step, said 2nd setting request was outputted from said information processor, or said 2nd setting request is outputted from said control means, and said mere setting request memory measure memorizes. According to the invention of claim 17, when judged with said 2nd setting request not being outputted in said determination step, in an access control step, access to the setup information memorized by said memory measure to said 1st setting request is permitted.

[Amendment 8]

[Document to be Amended]Specification

[Item(s) to be Amended]0047

[Method of Amendment]Change

[Proposed Amendment]

[0047]According to the invention of claim 4 and eight statements, the effect that the setting operation state of a printer can be canceled automatically without through a help is done so. According to the invention according to claim 10 or 14, the setup information of the printer concerned is memorized by a memory measure, Since it is judged whether the 2nd setting request is already outputted when controlling access to the setup information memorized by said memory measure according to the 1st setting request outputted from the information processor or the control means, At the time of the access control to setup information when printer setting operation is simultaneously performed from the control means by the side of a printer, and an external information processor, the effect that it can prevent certainly inconsistency arising in setting out or falling into setting-out impossible is done so. Since access to the setup information memorized by the memory measure to the 1st setting request was permitted when judged with the 2nd setting request not being outputted according to the invention of claim 13, The effect that it can prevent certainly inconsistency arising in setting out or falling into setting-out impossible is done so.

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(71)出願人 000001007

キヤノン株式会社

東京都大田区下丸子3丁目30番2号

(72)発明者 大矢 剛史

東京都大田区下丸子3丁目30番2号 キヤ
ノン株式会社内

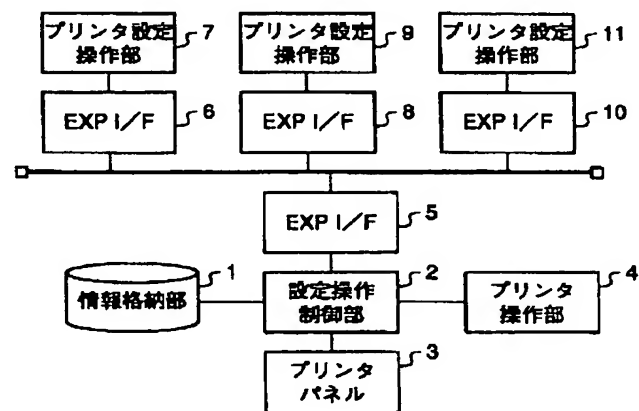
(74)代理人 弁理士 渡部 敏彦

(54)【発明の名称】 プリンタシステム、プリンタ、およびプリンタ設定方法

(57)【要約】

【目的】 プリンタ本体側と外部機器装置側から同時にプリンタ設定操作を行った場合に、設定に矛盾が生じたり設定不能に陥ったりすることを防止することができるプリンタシステムを提供する。

【構成】 プリンタと、プリンタに設けられプリンタ設定操作が可能なプリンタパネル3と、プリンタに接続された外部機器に設けられプリンタ設定操作が可能なプリンタ設定操作部7、9、11と、プリンタパネル3及びプリンタ設定操作部7、9、11によるプリンタ設定操作状態を蓄える情報格納部1と、プリンタパネル3及びプリンタ設定操作部7、9、11の何れかによりプリンタ設定操作が行われた場合は、情報格納部1の内容を参照して他からの設定操作要求を拒否する設定操作制御部2とを具備する。



【特許請求の範囲】

【請求項 1】 プリンタと、該プリンタに設けられ当該プリンタの設定操作が可能なプリンタ側設定操作手段と、前記プリンタに接続された外部機器に設けられ前記プリンタの設定操作が可能な外部機器側設定操作手段とを備えたプリンタシステムにおいて、

前記プリンタ側設定操作手段及び前記外部機器側設定操作手段によるプリンタ設定操作状態を記憶する記憶手段と、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段の何れかによりプリンタの設定操作が行われた場合は、前記記憶手段の記憶内容を参照して他の設定操作手段からの設定操作要求を拒否する制御手段とを具備することを特徴としたプリンタシステム。

【請求項 2】 前記請求項 1 記載のプリンタシステムにおいて、前記プリンタの設定操作状態の変更を前記各設定操作手段に通知する通知手段と、前記各設定操作手段に付設され前記設定操作状態の変更通知を受けて変更された設定操作状態の表示を評価する表示評価手段と、前記プリンタ側設定操作手段に付設され前記表示評価手段からの指示に基づき設定操作状態を表示するプリンタ側表示手段とを設けたことを特徴としたプリンタシステム。

【請求項 3】 前記請求項 1 または 2 記載のプリンタシステムにおいて、設定操作元を記憶する記憶手段を設け、前記制御手段は、前記記憶手段に記憶された設定操作元情報を前記外部機器へ送出する機能を有することを特徴としたプリンタシステム。

【請求項 4】 前記請求項 1、2 または 3 記載のプリンタシステムにおいて、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段によるプリンタ設定操作状態を評価する設定操作状態評価手段を設け、前記制御手段は、前記設定操作状態評価手段による評価に基づき所定の条件が成立したと判断した場合は設定操作状態を解除する機能を有することを特徴としたプリンタシステム。

【請求項 5】 プリンタと、該プリンタに設けられ当該プリンタの設定操作が可能なプリンタ側設定操作手段と、前記プリンタに接続された外部機器に設けられ前記プリンタの設定操作が可能な外部機器側設定操作手段とを備えたプリンタシステムのプリンタ設定方法において、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段によるプリンタ設定操作状態を記憶する記憶ステップと、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段の何れかによりプリンタの設定操作が行われた場合は、前記記憶手段の記憶内容を参照して他の設定操作手段からの設定操作要求を拒否する制御ステップとを具備することを特徴としたプリンタ設定方法。

【請求項 6】 前記請求項 5 記載のプリンタ設定方法に

定操作手段に通知する通知ステップと、前記各設定操作手段における設定操作状態の変更通知を受けて変更された設定操作状態の表示を評価する表示評価ステップと、前記表示評価手段からの指示に基づき前記変更された設定操作状態を前記プリンタで表示するプリンタ側表示ステップとを設けたことを特徴としたプリンタ設定方法。

【請求項 7】 前記請求項 5 または 6 記載のプリンタ設定方法において、設定操作元を記憶する記憶ステップを設け、前記制御ステップは、前記記憶ステップにより記憶された設定操作元情報を前記外部機器へ送出する機能を有することを特徴としたプリンタ設定方法。

【請求項 8】 前記請求項 5、6 または 7 記載のプリンタ設定方法において、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段によるプリンタ設定操作状態を評価する評価ステップを設け、前記制御ステップは、前記評価手段による評価に基づき所定の条件が成立したと判断した場合は設定操作状態を解除する機能を有することを特徴としたプリンタ設定方法。

【請求項 9】 外部機器に接続されるとともに、プリンタの設定操作が可能なプリンタ側設定操作手段を備えたプリンタにおいて、

前記プリンタ側設定操作手段及び前記外部機器側に設けられ当該プリンタの設定が可能な外部機器側設定操作手段によるプリンタ設定操作状態を記憶する記憶手段と、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段の何れかによりプリンタの設定操作が行われた場合は、前記記憶手段の記憶内容を参照して他の設定操作手段からの設定操作要求を拒否する制御手段とを具備することを特徴としたプリンタシステム。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、プリンタに接続する複数の外部機器装置からプリンタ設定操作を行う場合に最適なプリンタシステムに関する。

【0002】

【従来の技術】従来、プリンタが複数の外部機器装置に接続されると共に、これら外部機器装置からプリンタ設定操作が可能な場合においては、プリンタに接続される外部機器装置及びプリンタ本体側に装備されているプリンタ設定機構からプリンタ設定操作を行うことができるようになっている。

【0003】

【発明が解決しようとする課題】上述したように、プリンタに接続した外部機器装置及びプリンタ本体側のプリンタ設定機構からプリンタ設定操作が可能であるため、下記のような問題があった。即ち、外部機器装置及びプリンタ設定機構から同時にプリンタ設定操作を行うと、設定に矛盾が生じたり、設定不能に陥ったりするという不具合があった。

リント本体側と外部機器装置側から同時にプリンタ設定操作を行った場合に、設定に矛盾が生じたり設定不能に陥ったりすることを防止することができるプリンタシステムを提供することを目的とする。

【0005】

【課題を解決するための手段】請求項1の発明は、プリンタと、該プリンタに設けられ当該プリンタの設定操作が可能なプリンタ側設定操作手段と、前記プリンタに接続された外部機器に設けられ前記プリンタの設定操作が可能な外部機器側設定操作手段とを備えたプリンタシステムにおいて、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段によるプリンタ設定操作状態を記憶する記憶手段と、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段の何れかによりプリンタの設定操作が行われた場合は、前記記憶手段の記憶内容を参照して他の設定操作手段からの設定操作要求を拒否する制御手段とを具備する、という構成を採っている。

【0006】請求項2の発明は、前記請求項1記載のプリンタシステムにおいて、前記プリンタの設定操作状態の変更を前記各設定操作手段に通知する通知手段と、前記各設定操作手段に付設され前記設定操作状態の変更通知を受けて変更された設定操作状態の表示を評価する表示評価手段と、前記プリンタ側設定操作手段に付設され前記表示評価手段からの指示に基づき設定操作状態を表示するプリンタ側表示手段とを設けた、という構成を採っている。

【0007】請求項3の発明は、前記請求項1または2記載のプリンタシステムにおいて、設定操作元を記憶する記憶手段を設け、前記制御手段は、前記記憶手段に記憶された設定操作元情報を前記外部機器へ送出する機能を有する、という構成を採っている。

【0008】請求項4の発明は、前記請求項1、2または3記載のプリンタシステムにおいて、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段によるプリンタ設定操作状態を評価する設定操作状態評価手段を設け、前記制御手段は、前記設定操作状態評価手段による評価に基づき所定の条件が成立したと判断した場合は設定操作状態を解除する機能を有する、という構成を採っている。

【0009】請求項5の発明は、プリンタと、該プリンタに設けられ当該プリンタの設定操作が可能なプリンタ側設定操作手段と、前記プリンタに接続された外部機器に設けられ前記プリンタの設定操作が可能な外部機器側設定操作手段とを備えたプリンタシステムのプリンタ設定方法において、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段によるプリンタ設定操作状態を記憶する記憶ステップと、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段の何れかによりプリンタの設定操作が行われた場合は、前記記憶手段の記憶内容を参照して他の設定操作手段からの設定操作要求を拒否する制御手段とを具備する、という構成を採っている。

否する制御ステップとを具備する、という構成を採っている。

【0010】請求項6の発明は、前記請求項5記載のプリンタ設定方法において、前記プリンタの設定操作状態の変更を前記各設定操作手段に通知する通知ステップと、前記各設定操作手段における設定操作状態の変更通知を受けて変更された設定操作状態の表示を評価する表示評価ステップと、前記表示評価手段からの指示に基づき前記変更された設定操作状態を前記プリンタで表示するプリンタ側表示ステップとを設けた、という構成を採っている。

【0011】請求項7の発明は、前記請求項5または6記載のプリンタ設定方法において、設定操作元を記憶する記憶ステップを設け、前記制御ステップは、前記記憶ステップにより記憶された設定操作元情報を前記外部機器へ送出する機能を有する、という構成を採っている。

【0012】請求項8の発明は、前記請求項5、6または7記載のプリンタ設定方法において、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段によるプリンタ設定操作状態を評価する評価ステップを設け、前記制御ステップは、前記評価手段による評価に基づき所定の条件が成立したと判断した場合は設定操作状態を解除する機能を有する、という構成を採っている。

【0013】請求項9の発明は、外部機器に接続されるとともに、プリンタの設定操作が可能なプリンタ側設定操作手段を備えたプリンタにおいて、前記プリンタ側設定操作手段及び前記外部機器側に設けられ当該プリンタの設定が可能な外部機器側設定操作手段によるプリンタ設定操作状態を記憶する記憶手段と、前記プリンタ側設定操作手段及び前記外部機器側設定操作手段の何れかによりプリンタの設定操作が行われた場合は、前記記憶手段の記憶内容を参照して他の設定操作手段からの設定操作要求を拒否する制御手段とを具備する、という構成を採っている。

【0014】

【作用】請求項1、5、9の発明によれば、使用者が例えばプリンタ側設定操作手段によりプリンタの設定操作を行うと、記憶手段には、プリンタ側設定操作手段により設定操作状態であることが記憶される。そして、制御手段は、記憶手段の記憶内容を参照して、プリンタ側設定操作手段および外部機器側設定操作手段の何れかにより設定操作状態であるときは、他の設定操作手段からの設定操作要求を拒否する。これにより、プリンタ側設定操作手段及び外部機器側設定操作手段から同時にプリンタ設定操作を行った場合に、設定に矛盾が生じたり設定不能に陥ったりすることが防止される。

【0015】請求項2、6の発明によれば、使用者が例えばプリンタ側設定操作手段によりプリンタの設定操作を行なえば、通知手段は、プリンタの設定状態の変更状況を

段は、前記設定操作状態の変更通知を受けて変更された設定操作状態の表示を評価する。そして、プリンタ側表示手段には、表示評価手段からの指示に基づき設定操作状態が表示される。これにより、使用者がプリンタ側表示手段の表示を目視すれば、設定操作状態が確認できる。

【0016】請求項3、7の発明によれば、使用者が例えばプリンタ側設定操作手段によりプリンタの設定操作を行うと、記憶手段には、設定操作元（プリンタ側設定操作手段）が記憶される。そして、制御手段は、記憶手段に記憶された設定操作元情報を外部機器へ送出する。これにより、操作者の確認ができる。

【0017】請求項4、8の発明によれば、使用者が例えばプリンタ側設定操作手段によりプリンタの設定操作を行うと、設定操作状態評価手段は、プリンタ側設定操作手段によるプリンタ設定操作状態を評価する。そして、制御手段は、設定操作状態評価手段による評価に基づき、所定条件が成立したときは、設定操作状態を解除する。これにより、人手を介さずに設定操作状態が自動的に解除される。

【0018】

【実施例】以下、本発明の実施例を図面に基づいて説明する。

【0019】（1）第1実施例

図1は第1実施例に係るプリンタシステムの構成を示すブロック図であり、第1実施例のプリンタシステムは、情報格納部1と、設定操作制御部2と、プリンタパネル3と、プリンタ制御部4と、インタフェース部5と、インタフェース部6と、プリンタ設定操作部7と、インタフェース部8と、プリンタ設定操作部9と、インタフェース部10と、プリンタ設定操作部11とから構成されている。上述の情報格納部1、設定操作制御部2、プリンタパネル3、プリンタ制御部4、インタフェース部5はプリンタ側に設けられている。また、インタフェース部6、プリンタ設定操作部7は前記プリンタが接続された第1の外部機器装置側に設けられ、インタフェース部8、プリンタ設定操作部9は前記プリンタが接続された第2の外部機器装置側に設けられ、インタフェース部10、プリンタ設定操作部11は前記プリンタが接続された第3の外部機器装置側に設けられている。

【0020】これを詳述すると、情報格納部1は、設定操作状態情報を記憶するものであり、設定操作制御部2は、設定操作を制御するものである。これら情報格納部1及び設定操作制御部2は、本発明の特徴をなす構成要素である。また、プリンタパネル3は、プリンタ本体に装備されているユーザ用の操作部である。プリンタ制御部4は、プリンタ各部の動作を制御するものである。インタフェース部5は、各外部機器装置とのインタフェース部5を有するものである。

装置からプリンタ設定操作を行うためのものであり、インタフェース部6は、プリンタとのインタフェースを行うものである。また、プリンタ設定操作部9は、第2の外部機器装置からプリンタ設定操作を行うためのものであり、インタフェース部8は、プリンタとのインタフェースを行うものである。また、プリンタ設定操作部11は、第3の外部機器装置からプリンタ設定操作を行うためのものであり、インタフェース部10は、プリンタとのインタフェースを行うものである。

【0022】上記の如く構成したプリンタシステムでは、設定操作制御部2による制御及び情報格納部1に記憶した設定操作状態情報に基づき、複数のプリンタ設定操作部からのプリンタ設定要求を排他制御することにより、複数のプリンタ設定操作部からの同時設定を回避した設定操作を可能としている。図2は本実施例に係る情報格納部1の情報内容を示す概念図であり、状態と設定操作元とをデータとして持っている。データの種類／内容は、本実施例の動作の実現に支障をきたさない限りにおいては、どのような形式でもよい。尚、本実施例ではプリンタに外部機器装置を3台接続した例を示しているが、外部機器装置は3台に限定されるものではない。

【0023】次に、第1実施例の動作を図3に基づき説明する。プリンタがオンライン状態すなわちジョブ待機状態のときは、情報格納部1には、設定操作制御部2により「状態：ジョブ待機状態、ホスト：なし」なるデータが設定されている。ここで、ユーザがプリンタパネル3を操作することによりジョブ待機状態からプリンタ設定状態への移行を指示すると、プリンタパネル3は、設定操作制御部2へ設定操作要求を出力する。これに伴い、設定操作制御部2は、プリンタパネル3からの設定操作要求を受けると（ステップSA1、ステップSA2の答が肯定）、情報格納部1のデータを参照して状態：ジョブ待機状態であることを確認する（ステップSA4）。設定操作制御部2は、情報格納部1のデータに基づき現在の状態がジョブ待機状態であることを確認すると（ステップSA5の答が否定）、情報格納部1の内容を「状態：設定操作中、ホスト：プリンタパネル」なるデータに変更すると共に（ステップSA6）、プリンタパネル3の設定操作要求を受け、プリンタパネル3とプリンタ制御部4とをインタフェースする（ステップSA7）。

【0024】ここで、他のユーザが例えば第1の外部機器装置のプリンタ設定操作部7を操作すると、プリンタ設定操作部7は、インタフェース部6及びインタフェース部5を介してプリンタ側の設定操作制御部2へ設定操作要求を出力する。設定操作制御部2は、プリンタ設定操作部7からの設定操作要求を受けると（ステップSA1、ステップSA2の答が肯定）、情報格納部1のデータを参照し（ステップSA4）、設定操作可能か否かを

報格納部 1 のデータに基づき現在の状態が設定操作状態であることを確認すると（ステップ S A 5 の答が肯定）、プリンタ設定操作部 7 の設定操作終了要求を拒否する（ステップ S A 13）。

【0025】ユーザがプリンタパネル 3 を操作して上述したプリンタ設定操作を終了し、プリンタをジョブ待機状態に戻したことに伴い、設定操作制御部 2 は、プリンタパネル 3 からの操作終了を受けると（ステップ S A 1、ステップ S A 3 の答が肯定）、情報格納部 1 のデータを参照し（ステップ S A 8）、設定操作中のものがあ 10るか否かを確認すると共に（ステップ S A 9）、設定操作中ホストが設定要求ホストか否かを確認する（ステップ S A 10）。設定操作制御部 2 は、ステップ S A 9 及びステップ S A 10 の答が肯定の場合は、情報格納部 1 の内容を「状態：設定操作中、ホスト：プリンタパネル」から「状態：ジョブ待機、ホスト：なし」なるデータに変更し（ステップ S A 11）、プリンタパネル 3 とプリンタ制御部 4 とのインタフェースを解除する（ステップ S A 12）。

【0026】次に、ユーザがプリンタ設定操作部 7 を操作した場合も、プリンタ設定操作部 7 からインタフェース部 6 及びインタフェース部 5 を介して設定操作制御部 2 へ設定操作要求が送られる点があるのみで、動作自体に変更はない。

【0027】上記の構成及び動作により、複数の外部機器装置のプリンタ設定操作部からの同時設定による設定矛盾を回避できるため、複数の外部機器装置で共有する 1 台のプリンタの設定を的確に行うことができる。

【0028】（2）第 2 実施例

図 4 は第 2 実施例の構成を示す図であり、第 2 実施例が第 1 実施例と相異なる点は、プリンタ側に操作状態通知部 4 1、表示評価部 4 2 を設けると共に、各外部機器装置側に表示評価部 4 3、4 4、4 5 を設けた点であり、これ以外の構成は同様であるため、共通する構成には同一符号を付し説明を省略するものとする。第 2 実施例では、第 1 実施例で説明した動作に加え、ユーザによる設定操作状態を表示するようにしている。

【0029】これを詳述すると、操作状態通知部 4 1 は、ユーザによる設定操作状態を表示評価部 4 2、4 3、4 4、4 5 に通知するものである。また、表示評価部 4 2 は、プリンタパネル 3 に付設されており、表示評価部 4 3、4 4、4 5 は、プリンタ設定操作部 7、9、11 に各々付設されている。表示評価部 4 2、4 3、4 4、4 5 には、操作状態通知部 4 1 から送られた通知情報が表示される。また、インタフェース部 5、6、8、10 は、操作状態通知部 4 1 から出力された通知情報を送受する機能を有する。

【0030】次に、第 2 実施例の動作について説明する。第 2 実施例において、プリンタ側は第 1 実施例と同様

例に特有の部分について詳述する。

【0031】プリンタがオンライン状態すなわちジョブ待機状態のとき、第 1 実施例と同様にユーザがプリンタパネル 3 を操作してジョブ待機状態からプリンタ設定状態への移行を指示すると、プリンタパネル 3 は、設定操作制御部 2 へ設定操作要求を出力する。これに伴い、設定操作制御部 2 は、プリンタパネル 3 からの設定操作要求を受け、情報格納部 1 を参照して操作評価を行う。設定操作制御部 2 は、操作可能と判断した場合は、情報格納部 1 のデータを設定操作可能状態を示すデータに変更すると共に、操作状態通知部 4 1 に操作状態変更の旨を通知し、プリンタパネル 3 とプリンタ制御部 4 との情報交換をインタフェースする。

【0032】操作状態通知部 4 1 は、設定操作制御部 2 から設定操作要求を受けたことに伴い、情報格納部 1 に蓄えられている情報を得て、表示評価部 4 2、4 3、4 4、4 5 に対して表示変更処理を通知する。この場合、操作状態通知部 4 1 による通知の方法は、プリンタと外部機器装置との接続方法によって様々であり、本実施例では特に通知方法については省略する。

【0033】表示評価部 4 2 では、操作状態通知部 4 1 から表示変更処理の通知を受けるが、プリンタパネル 3 から操作変更処理を行っていることを評価し、表示変更処理の通知を無視する。他方、表示評価部 4 3、4 4、4 5 は、操作状態通知部 4 1 から各々、表示変更処理の通知を受け、通知情報の表示が可能な場合には、各々、プリンタ設定操作部 7、9、10 に対して変更表示の指示を行う。これにより、プリンタ設定操作部 7、9、10 は、これらプリンタ設定操作部 7、9、10 にそれぞれ対応する外部機器装置の表示部（図示略）に表示を行う。

【0034】ここで、上述した通知情報の表示が可能な場合とは、例えば外部機器装置の表示部に自動的にメッセージを表示することが可能なシステムであったり、外部機器装置で通知情報を表示する準備が出来ている場合など、表示に関して問題ない状態やユーザにより表示可能な設定がなされている場合をいう。

【0035】同じく、ユーザがプリンタパネル 3 を操作してプリンタ設定操作を終了する場合も、設定操作制御部 2 は、プリンタパネル 3 の設定操作終了を受け、情報格納部 1 を設定操作状態を示すデータからジョブ待機状態を示すデータに変更すると共に、操作状態通知部 4 1 へ操作状態変更の旨を通知し、更にプリンタパネル 3 の設定操作要求を受け付ける処理としてプリンタパネル 3 とプリンタ制御部 4 とのインタフェースを解放する。操作状態通知部 4 1 は、設定操作制御部 2 から設定操作要求を受け、表示評価部 4 2、4 3、4 4、4 5 に表示変更処理を通知する。これ以降の評価／表示処理も同様である。

作し設定操作要求を出した場合、プリンタ設定操作部 7 からは、インタフェース部 6 及びインタフェース部 5 を介して設定操作制御部 2 へ設定操作要求が送られる。設定操作制御部 2 は、プリンタ設定操作部 7 からの設定操作要求を受け、上述した如くプリンタパネル 3 からの設定操作要求の受け入れと同様の工程でプリンタ設定操作部 7 とプリンタ制御部 4 とをインタフェースする。操作状態通知部 4 1 は、設定操作制御部 2 から設定操作要求を受け、表示評価部 4 2、4 3、4 4、4 5 に表示変更処理を通知する。表示評価部 4 2 では、操作状態通知部 4 1 からの表示変更処理の通知を受け、また、プリンタパネル 3 では、パネル入力のないことを確認して表示評価部 4 2 に設定操作中の表示を行う。表示評価部 4 3、4 4、4 5 は、それぞれ評価／表示処理を行う。

【0037】上記の構成及び動作により、第 1 実施例と同様に、複数のプリンタ設定操作部からの同時設定による設定矛盾を回避でき、複数の外部機器装置で共有する 1 台のプリンタの設定を的確に行うことができると共に、それぞれのプリンタ設定操作部による設定操作状態を通知することが可能となる。

【0038】尚、第 2 実施例では、表示評価部 4 2 とプリンタパネル 3、表示評価部 4 3 とプリンタ設定操作部 7、表示評価部 4 4 とプリンタ設定操作部 9、表示評価部 4 5 とプリンタ設定操作部 11 を別々の構成として述べたが、一体化したシステムと見なしても何等問題はない。また、第 2 実施例では、操作状態通知部 4 1 から表示評価部 4 2、4 3、4 4、4 5 に対して表示変更処理を通知し、表示評価部 4 2、4 3、4 4、4 5 の各々で表示評価処理を行っているが、操作状態通知部 4 1 において、情報格納部 1 のデータを参照して設定操作元の外部機器装置には表示変更処理を通知しない等の動作を行う場合でも上述した第 2 実施例を応用することができる。

【0039】即ち、第 2 実施例の特徴とする点は、複数の外部機器装置の何れかから設定操作要求を受けた場合に、設定操作元の外部機器装置を含む含まないを限定することなく、外部機器装置に対する設定変更通知を行うことである。

【0040】また、第 2 実施例では、情報格納部 1 に格納する情報として第 1 実施例と同様に上記図 2 に示したものを一例として挙げているが、情報の構成は任意であり、情報をプリンタパネルや各プリンタ設定操作部に各々付属させた表示評価部に伝達する仕組みが重要である。また、設定操作状態のみを通知し、設定操作状態のみを表示する実施例も同様に構成することが可能である。

【0041】(3) 第 3 実施例

次に、第 3 実施例について説明する。第 3 実施例は、設定操作状態を自動解除するようにしたものであり、第 2

同様である。図 5 は第 3 実施例の情報格納部 1 の情報内容であり、図 6 は第 3 実施例の設定操作制御部 2 が情報として保持している自動解除条件の例である。また、図 7 は第 3 実施例の動作フローチャートであり、当該図 7 は上記図 3 で示した設定操作制御部 2 の動作フローチャートのうちステップ S A 1 の部分を示している。第 3 実施例では、特に設定操作制御部 2 の動作について説明する。

【0042】設定操作制御部 2 が、何れかのプリンタ設定操作部からの操作要求を受けると、情報格納部 1 には、図 5 に示すような情報（状態、ホスト名、設定開始時間）が蓄えられる。以後、設定操作制御部 2 は、設定操作要求／終了要求がない場合は（ステップ S B 1 の答が否定）、情報格納部 1 のデータを読み込み（ステップ S B 2）、設定操作中であるか否かを確認する（ステップ S B 3）。そして、設定操作制御部 2 は、設定操作中の場合は（ステップ S B 3 の答が肯定）、設定操作制御部 2 内部に保持している自動解除条件データの評価を行い（ステップ S B 4）、条件が満たされた場合は（ステップ S B 4 の答が肯定）、操作解除と見なして上記図 3 のステップ S A 1 の処理へ移行する。即ち、設定操作制御部 2 は、操作要求元に設定操作解除を通知すると共に操作状態通知部 4 1 に操作要求解除を通知し、また、操作状態通知部 4 1 は、表示評価部 4 2、4 3、4 4、4 5 に表示変更処理を通知する。

【0043】以上のようにして、設定操作状態からの強制解除を実現することができる。尚、第 3 実施例の図 6 に示した 2 つの条件項目は一例であり、条件項目は評価可能な要素であれば上記図 6 のものに限定されるものではない。また、第 3 実施例では、第 1 実施例の動作に基づき上記図 7 に示したループで形成される動作を行っているが、条件評価を行うタイミングは、システムの動作形態に従ってイベント駆動型やポーリング型など自由である。即ち、第 3 実施例では、条件を評価して設定操作状態を自動解除する点が特徴である。

【0044】

【発明の効果】以上説明したように、請求項 1、5、9 記載の発明によれば、プリンタ側設定操作手段及び外部機器側設定操作手段から同時にプリンタ設定操作を行った場合に、設定に矛盾が生じたり設定不能に陥ったりすることを確実に防止することができる、という効果を奏する。

【0045】請求項 2、6 記載の発明によれば、使用者がプリンタ側表示手段の表示を目視すれば、現在のプリンタ設定操作状態を的確に確認することができる、という効果を奏する。

【0046】請求項 3、7 記載の発明によれば、操作者を的確に確認することができる、という効果を奏する。

【0047】請求項 4、8 記載の発明によれば、プリンタ

* を示す概念図である。

【図7】第3実施例の設定操作制御部に関する動作フローチャートである。

【符号の説明】

1 情報格納部（記憶手段）

2 設定操作制御部（制御手段）

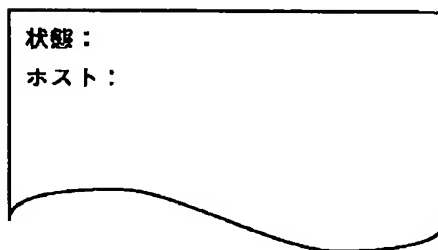
3 プリンタパネル（プリンタ側設定操作手段）

7, 9, 11 プリンタ設定操作部（外部機器側設定操作手段）

10 4 1 操作狀態通知部 (通知手段)

4 2, 4 3, 4 4, 4 5 表示評価部（表示手段、評価手段）

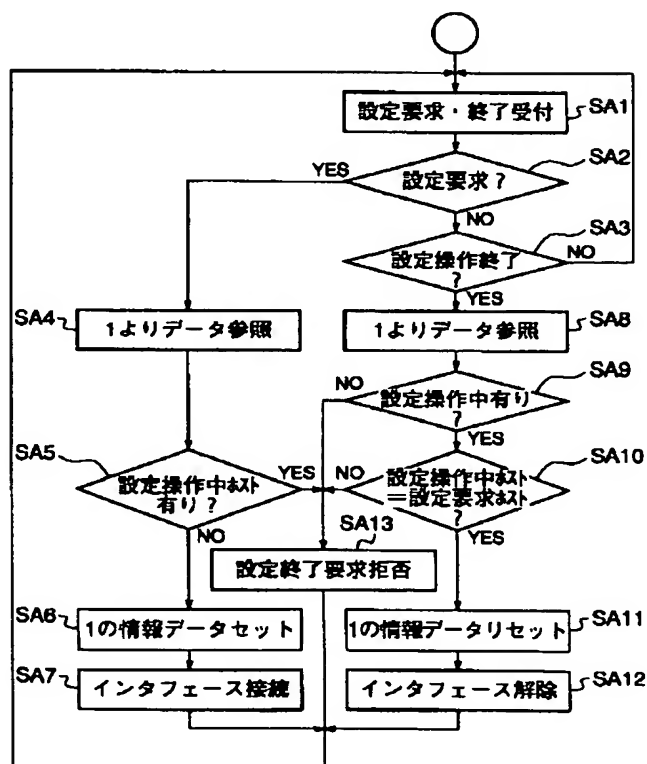
【図2】



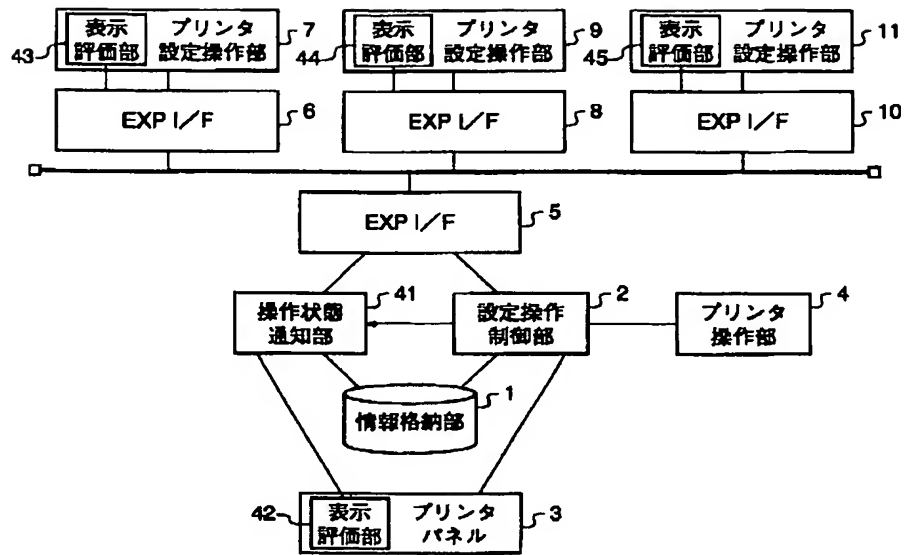
【图3】

状態：
ホスト：
設定開始時間：

OR 設定操作開始から10分以上経過
OR 最終アクセスから2分経過



【図 4】



【図 7】

